

Amendments to the Claims:

This listing of claims replaces prior versions, and listings, of claims in the application:

Listing of Claims:

1. (ORIGINAL) Integrated biosensor and simulation system comprising:

5 a sensor for sensing a biological target to generate a signal; and
 a simulator for using the signal and a model of the target to generate a therapeutic or
diagnostic output.

2. (ORIGINAL) The system of claim 1 wherein:

10 the sensor is reconfigurable by the simulator.

3. (ORIGINAL) The system of claim 1 wherein:

 the sensor senses a food material for consumption by the biological target to generate a
second signal, the simulator further using the second signal to generate the therapeutic or
diagnostic output.

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4. (ORIGINAL) The system of claim 1 wherein:

 the simulator generates the output according to a regulatory condition.

20 5. (ORIGINAL) The system of claim 1 wherein:

 the sensor couples to the simulator via a programmable switch.

6. (ORIGINAL) Automated sensor and simulation method comprising the steps of:

sensing a biological target to generate a signal; and
simulating using the signal and a model of the target to generate a therapeutic or
diagnostic output.

5 7. (ORIGINAL) The method of claim 6 wherein:

a simulator for simulating reconfigures a sensor for sensing.

8. (ORIGINAL) The method of claim 7 wherein:

the sensor senses a food material for consumption by the biological target to generate a
10 second signal, the simulator further using the second signal to generate the therapeutic or
diagnostic output.

9. (ORIGINAL) The method of claim 7 wherein:

the simulator generates the output according to a regulatory condition.

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10. (ORIGINAL) The method of claim 7 wherein:

the sensor couples to the simulator via a programmable switch.

11. (NEW) Implantable network-biosensor comprising:

20 a sensor unit for receiving a multi-sensor signal from a biosensor platform for detecting
a biological material of a host; and
a controller for processing a systems-biology platform for verifying or modifying a
simulation model associated with the biological material.

12. (NEW) The network biosensor of claim 11 wherein:
the sensor unit is configurable or programmable for detecting multi-sensor signaling,
thereby enabling the biosensor platform to access one or more sensor signals from the group
consisting essentially of a DNA or RNA sensor, a peptide or protein sensor, an antibody or
5 antigen sensor, a vector or virus-vector sensor, a lipid or fatty-acid sensor, and an inorganic-ion
or electrochemical sensor.

13. (NEW) The network biosensor of claim 11 wherein:
the sensor unit is configurable or programmable for detecting multi-sensor signaling,
10 thereby enabling the biosensor platform to access one or more sensor signals from the group
consisting essentially of a tissue-factor sensor, a steroid sensor, a neurotransmitter sensor, a pH
sensor, a free-radical sensor, a carbohydrate sensor, a neural sensor, a chemical sensor, a small-
molecule sensor, an exon sensor, a metabolites sensor, an intermediate sensor, a chromosome
sensor, and a cell sensor.

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14. (NEW) The network biosensor of claim 11 wherein:
the sensor unit comprises a positioning chip for immobilizing or positioning the
biological material for sensing thereof.

20 15. (NEW) The network biosensor of claim 11 wherein:
the sensor unit receives another multi-sensor signal from another biosensor platform for
detecting another biological material of the same or another host.

16. (NEW) The network biosensor of claim 11 wherein:

the controller is configurable or programmable for processing multiple simulation applications, thereby enabling the systems-biology platform to access one or more simulation models from the group consisting essentially of a genomics model, a proteomics model, a
5 computational chemistry model, a pharmacogenomics model, a computational biology model, a computational biophysics model, a computational cell behavior model, a pharmacokinetics model, a metabolomics model, and a transcriptomics model.

17. (NEW) The network biosensor of claim 11 wherein:

10 the controller is configurable or programmable for processing multiple simulation data, thereby enabling the systems-biology platform to access one or more simulation data from the group consisting essentially of a genetic-disorder or mutation data, an infectious disease or infection data, an immunity-disease data, a single-organ or cell-type autoimmune disease data, and a neoplasia data.

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18. (NEW) The network biosensor of claim 11 further comprising:

a therapeutic unit for releasing or dispensing a therapeutic material from a reservoir in or onto the host, whereby the sensor unit may automatically detect an effect of the therapeutic material on the host.

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19. (NEW) The network biosensor of claim 18 wherein:

the therapeutic unit is configurable or programmable for releasing or dispensing the therapeutic material alternatively from manufacture means, thereby enabling the systems-

biology platform to instruct the therapeutic unit configurably or programmably using one or more manufacture-means components from the group consisting essentially of pharmaceuticals, biopharmaceuticals, reconfigurable biocatalytic chips, tissue scaffolds, and micro or nano-array or electro-mechanical tools.

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20. (NEW) The network biosensor of claim 11 wherein:

the controller processes the systems-biology platform adaptively for generating a diagnostic or therapeutic signal or report, whereby the systems-biology platform may access one or more simulation applications from the group consisting essentially of a neural or

10 learning network, a statistical or probabilistic expert, fuzzy-logic or knowledge-based system, an artificial intelligence or decision-making inference-engine or program, and a supervised or unsupervised Bayesian or Markovian analysis, clustering, criterion or classification program.